Chun-Hsiang **Chan**

Spatial Data Scientist · Ph.D.

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CHUN-HSIANG CHAN

"I always aim to overcome my limitations."

Education

National Taiwan University (NTU)

Taipei, Taiwan

Ph.D. in Geography — *Sep. 2015 - Jul. 2021*

- **GPA**: 4.12/4.3 (76)
- Applied spatiotemporal data analysis to unveil the global airline alliance market with 50+ million of flight schedule data.
- Leveraged worldwide flight schedule data with complex network analysis to characterize the aviation market structure of global airline alliances.

Shih Chien University (USC)

Taipei, Taiwan

M.S., Department of Food Science, Nutrition, and Nutraceutical Biotechnology — *Sep. 2018 - 2020*

- **GPA**: 4.0/4.0 (30)
- Revealed the critical physicochemical parameters with semi-gelatinized high amylose maize starch for quantifying slowly digestible starch and resistant starch mechanism during ultrasonication via machine learning (ML) techniques.

National Taiwan University (NTU)

Taipei, Taiwan

M.S., Department of Geography — *Jan. 2013 - 2015*

- **GPA**: 3.75/4.3 (31)
- - Identified seismic precursors with massive electromagnetic processing and frequency domain analysis to spatiotemporally predict the epicenter (24%) and occurrence time (68%) of seismic events one week before from 2013 to 2014 (magnitude > 4).

National Taipei University of Education (NTUE)

Taipei, Taiwan

B.Soc.Sci., Department of Social and Regional Development — *Sep. 2008 - 2012*

- **GPA**: 3.79/4.3 (174)
- Determined debris-flow critical rainfall line for disaster prevention through ML techniques (FCGA, k-means clustering, and support vector machine) with 5 years of rainfall data and 21 geological types data.

Experience

Department of Radiology, School of Medicine, Taipei Medical University

Taipei, Taiwan

Postdoctoral Research / Department of Radiology, Taipei Municipal Wanfang Hospital, Taipei Medical University — *2021 - Present*

- Evaluated the 3D trabecular microstructure parameters to reveal the relationship between areal BMD dual-energy X-ray Absorptiometry and volumetric BMD from QCT.
- Investigated the vertebral fracture assessment problems with a 2D plain-film radiograph and different 3D CT grading methods (conventional, consensus, and global search).
- Developed a 100% accuracy and rapid automated bone mineral density (BMD) report generator to improve efficiency for the report production.

Institute of Sociology, Academia Sinica

Taipei, Taiwan

Data Scientist — *2019 - Present*

- Utilized complex analysis techniques to investigate the social network formulation through quantitative and qualitative approaches.
- Conducted spatiotemporal statistical analyses (SaTScan & LISA) to reveal the preferred locations of multi-religious landscapes with 400-year cultivation data in Taipei city.
- Applied Louvain community detection and ML techniques (PCA, clustering, and hierarchical clustering) to demystify the association between pilgrimage network and religious development history.

School of Journalism and Communication, The Chinese University of Hong Kong — *Hong Kong, China*

Data Scientist / A Joint Business Planning on Social Media Marketing — *2019 - Present*

- Collected fine-dining brand's Facebook engagement data to demystify the pandemic impact on social media behavior (2019 to 2021).
- Applied ML techniques and time-series analysis to predict the reservation trend.

Department of Geography, NTU — *Taipei, Taiwan*

Research Assistant & Teacher Assistant / Geospatial Comoputational Science Laboratory — *2019 - 2021*

- Timely estimated the global exposure risk mobile app for direct and transfer air passengers to meet WHO healthcare goals and traveler needs in the COVID-19 pandemic.
- Demystified the role of transfer activities in cross-province transmission after Wuhan city lockdown by web crawling 1+ million railway schedule data during the COVID-19 pandemic.
- Utilized survival analysis and community detection for H1N1 global disease transmission with 85+ million global flight schedules.

Department of Geography, NTU — *Taipei, Taiwan*

Research Assistant & Teacher Assistant / Remote Sensing and Spatial Knowledge Laboratory — *2013 - 2021*

- Designed an automated low-frequency electromagnetic signal processing and pattern recognition system.
- Applied ML techniques in seismic precursor analysis and automated vertical stratum structure recognition.

CyberSecurity Technology Institute, Institute for Information Industry (III) — *Taipei, Taiwan*

Data Scientist Engineer / Analytical Intelligence Section, Artificial Intelligent Research and Development Center — *2017 - 2019*

- Processed air pollution data to identify the spatiotemporal causal relationship between stationary emission sources and ambient air quality.
- Developed a real-time and open-source cybersecurity monitoring system with Elasticsearch, Logstash, and Kibana (ELK), which analyzed the suspicious packets.
- Implemented a generative adversarial network (GAN) model to detect malicious behaviors with a 250 GB malware dataset.

Department of Social and Regional Development, NTUE — *Taipei, Taiwan*

Research Assistant & Teacher Assistant / Debris-flow Disaster Prevention Laboratory — *2013 - 2016*

- Leveraged social media advertising to promote crowd-sourcing debris-flow disaster platform and mobile app.
- Adopted several spatiotemporal hydrological analyses to timely characterize debris-flow disasters to informed experts and public users on a website and mobile app.

National Science and Technology Center for Disaster Reduction (NCDR) — *Taipei, Taiwan*

Research Intern / Slopeland Division — *2011 - 2011*

- Conducted spatial statistical methods to reveal the hidden debris flow and landslide areas from massive high-resolution remote-sensing images.

Department of Chemistry, NTU — *Taipei, Taiwan*

Project Student / JTC Organometallic Research Laboratory) — *2010 - 2012*

- Synthesized and characterized - from ligands to complexes [(o-C5H4N)C(CH3)(R1)NR2]AlMe2
- Characterized organometallic precursors by NMR techniques and X-Ray crystallography showing distorted tetrahedral structures.
- Catalyzed ring-opening polymerization of ε-*caprolacton*-caprolactone with the activities and the *Mn* values.
- Displayed the electronic and steric properties of distinct ligand influences toward molecular weight and PDI values.

Invited Talks

Nov., 2021 **Invited Speaker**, The Roles of Spatial Analysis During the COVID-19 Pandemic	*Chinese Culture University*
Jan., 2020 **Invited Speaker**, Characterizing Major Airline Alliances: A Network Analysis	*Kyoto University*
Jan., 2020 **Invited Speaker**, A Social Network Approach to Detect the Characteristics of Fake News	*Institute for Information Industry*
Feb., 2019 **Keynote Speaker**, 2019 Present Sociology under Big Data	*Academia Sinica*
Sep., 2014 **Keynote Speaker**, Define an Expectation for Your University Life	*NTUE*
Apr., 2014 **Keynote Speaker**, 2014 Disaster Prevention and Warning Application in APP Competition	*TICC, Taipei*

Thesis

2021	**Ph.D. Dissertation**, Characterizing Major Airline Alliances: A Network Analysis. *Department of Geography, National Taiwan University*	*Taipei, Taiwan*
2020	**Master Thesis**, Effects of Ultrasonic Treatment on Physical Properties and *in vitro* Digestibility of High Amylose Maize Starch. *Department of Food Science, Nutrition, and Nutraceutical Biotechnology, Shih Chien University*	*Taipei, Taiwan*
2015	**Master Thesis**, Applying Ultra Low Frequency Remote Sensing Techniques in the Earthquake Precursor Analysis —Using Taiwan as an Example. *Department of Geography, National Taiwan University*	*Taipei, Taiwan*
2011	**Bachelor Thesis**, Ring-Opening Polymerization of ε-caprolactone Using Organoaluminum Complexes Bearing Amido-pyridine Bidentate Ligand. *Department of Chemistry, National Taiwan University*	*Taipei, Taiwan*
2011	**Bachelor Thesis**, Establishing Debris-Flow Cluster and Modified Critical Rainfall Line. *Department of Social and Regional Development, National Taipei University of Education*	*Taipei, Taiwan*

Teaching Experience

Assist. Prof. | Tamkang University

2021	**Advanced C Programming and It's Applications**, Department of Geography (Fall'21)	*College of Engineering*

TA | National Taiwan University

2021	**Network Data Analysis and Models**, Department of Geography (Spring'21)	*College of Science*
2018	**Computer Programming**, Department of Geography (Spring'18)	*College of Science*
2017-2018	**Russian (I)**, Department of Foreign Languages and Literatures (Fall'17 to Spring'18)	*College of Liberal Arts*
2017-2018	**Russian (III)**, Department of Foreign Languages and Literatures (Fall'17 to Spring'18)	*College of Liberal Arts*
2017	**Russian (II)**, Department of Foreign Languages and Literatures (Spring'17)	*College of Liberal Arts*
2017	**Russian Listening Training**, Department of Foreign Languages and Literatures (Spring'17)	*College of Liberal Arts*
2016	**Medical Database Systems**, Institute of Biomedical Engineering (Fall'16)	*College of Medicine*
2014	**Special Topics in Spatial Information**, Department of Geography (Spring'14)	*College of Science*
2014	**Remotely Sensed Land Monitoring**, Department of Geography (Spring'14)	*College of Science*
2013	**Spatial Information Research Methods**, Department of Geography (Fall'13)	*College of Science*
2013	**Applying Spatial Information in Tourism Recreation**, Department of Geography (Fall'13)	*College of Science*

TA | National Taipei University of Education

2015 & 2016	**Geographic Information System**, Department of Social and Regional Development (Spring'15 & '16)	*College of Education*

TA | National Taiwan Normal University

2018	**Data Mining**, Department of Computer Science and Information Engineering (Fall'18)	*College of Science*

Academic Service

SCI	**Reviewer**, International Journal of Health Geographics	*Journal Article*
SCI	**Reviewer**, Plos One	*Journal Article*
EI	**Reviewer**, International Journal of Web Based Communities	*Journal Article*

Honors & Awards

Research

2020	**The Second Prize**, 2020 Canada - Taiwan Bilateral Conference on Nutrition, Health, Benefit and Innovative Processing of Whole Grains and Pulses	*Taichung, Taiwan*
2019	**The Third Prize**, 2019 International Conference on Grain Industry Development and Annual Meeting of Taiwan Grain Industry Association (TGiA)	*Taichung, Taiwan*
2018	**Young Scientist Award**, 2nd CiC Students' Workshop: Driving Sustainable Development	*Tsukuba, Japan*
2014	**The First Prize**, The 15th Cross-Strait Symposium on Environmental Resources and Ecological Conservation	*Zhangjiajie, China*
2013	**The Second Prize**, The 14th Cross-Strait Symposium on Environmental Resources and Ecological Conservation	*Kunming, China*
2011	**The First Prize**, The 12th Cross-Strait Symposium on Environmental Resources and Ecological Conservation	*Nanchang, China*
2011	**Selected (Highest)**, Undergraduate Student Thesis Presentation in Class of 2012	*NTUE, Taiwan*

Competition

2014	**Third Prize**, 2014 Disaster Prevention and Warning Application in APP Competition	*Taipei, Taiwan*

Scholarship and Grants

2021	**Journal Paper Publication Grants for Doctoral Students at Dept. of Geography**,	*NTU, Taiwan*
2020	**NetSci-X 2020 Travel Grants**, NetSci-X 2020, Waseda University	*Japan*
2020	**College of Science Travel Grants for International Conference**, College of Science	*NTU, Taiwan*
2020	**Honorary Membership**, The Phi Tau Phi Scholastic Honor Society of the Republic of China	*Taipei, Taiwan*
2020	**Academic Excellence Award**, Department of Food Science, Nutrition, and Nutraceutical Biotechnology	*USC, Taiwan*
2019-2020	**Grant for Ph.D. Candidates in the Humanities and Social Sciences to Write Doctoral Thesis**,	*MOST, Taiwan*
2019	**College of Science Travel Grants for International Conference**, College of Science	*NTU, Taiwan*
2018-2019	**Presidential Award**, Department of Food Science, Nutrition, and Nutraceutical Biotechnology(Fall'18, Spring'19)	*USC, Taiwan*
2018	**Travel Grants for 2018 Tsukuba Global Science Week**, NTU and Tsukuba University	*Taiwan & Japan*
2017-2018	**Graduate Student Representative of College of Science**, College of Science	*NTU, Taiwan*
2014	**Budget Supplement for Graduated Student Attending International Conference**,	*MOST, Taiwan*
2010-2011	**Presidential Award**, Department of Social and Regional Development (Spring'10, Fall'11)	*NTUE, Taiwan*

Certifications, Skills & Interests

Languages

Chinese: Native; **English**: Fluent; **Russian**: Conversant; **Japanese**: Beginning; **Spanish**: Beginning

Certifications

Emergency Medical Technician: Level 1 (EMT1)
Certified Scanning Electron Microscopy Operator | Certified X-ray Diffraction Operator
Teaching Certificate for Elementary School | HACCP Quality Control (Primary & Advanced)
Tour Guide of General Examination and Tour Leader of General Examination
TBSA Certificate of Business Planning Proficiency (Elementary)
National Volleyball Referee (C) | Certified lifeguard and Certified Swimming Coach (Level B & C)

Technical Skills

Computer Science: Python, Matlab, R, C, C#, JavaScript, jQuery, jQueryUI, Android Development, HTML, MySQL, Nodejs, AngularJS, MongoDB, Elasticsearch, Spark, Facebook APIs and Twitter APIs
Geography: GIS (ArcGIS, QGIS, Super GIS), Spatial Statistics, Spatial Database, Complex Network Analysis, Gephi
Physics: Signal Processing (in time sequence and frequency) and Electromagnetic Analysis
Food Chemistry: Starch Science, Resistant Starch, Slowly Digestible Starch, *in vitro* Digestibility, SEM, XRD and HPSEC
Chemistry: Organometallic synthesis, NMR, IR, HPLC, ESI-MASS and pH meter
Design: Illustrator, Photoshop, Dreamwaver and Google SketchUp

Research Projects

Ministry of Science and Technology

2021-2023	**PostDoc**, Case control longitudinal study of Romosozumab vs. Denosozumab treatment for osteoporotic women in assessment of HRCT-based vertebral structural changes	*Participant*
2019-2021	**RA/ PM**, An Early Warning Framework for International Spread of Infectious Diseases -Assessing disease importation risk in Taiwan and East Asian regions	*Participant*
2019-2020	**PI/ Ph.D. Candidate**, Grant for Ph.D. Candidates in the Humanities and Social Sciences to Write Doctoral Thesis	*Principal Investigator*
2016-2017	**RA**, Slopeland Disaster Risk Estimation for Mountain Region Community and Revegetation - Sediment Disaster Risk Evaluation and Adaptation Study in Isolated Community(I)	*Participant*
2015-2016	**RA**, Combine Crowd-Sourcing Disaster Information and Early Warning Technique for Real-time Interactive Disaster Information Platform - To Establish an Interactional Real-Time Debris-flow Disaster Information System and its extended (III)	*Participant*
2015-2016	**RA**, Slopeland Disaster Prevention System for Local Community - Combine Rainfall Information for Debris-flow Potential Region and Application (I)	*Participant*
2014-2015	**RA**, Combine Crowd-Sourcing Disaster Information and Early Warning Technique for Real-time Interactive Disaster Information Platform - To Establish an Interactional Real-Time Debris-flow Disaster Information System and its extended (II)	*Participant*
2013-2014	**RA**, Combine Crowd-Sourcing Disaster Information and Early Warning Technique for Real-time Interactive Disaster Information Platform - To Establish an Interactional Real-Time Debris-flow Disaster Information System and its extended (I)	*Participant*

National Taipei University of Education

2010	**RA**, Establishment and Promotion of Virtual Reality Education Platform for Ocean Environment Education	*Participant*

Ministry of Education

2016	**PM**, The 14th International Senior High Schools Intelligent Ironman Creativity Contest	*Participant*
2013	**PM**, The 11th International Senior High Schools Intelligent Ironman Creativity Contest	*Participant*
2012	**PM**, The 10th International Senior High Schools Intelligent Ironman Creativity Contest	*Participant*

Selected Publications

Peer-Reviewed Journal Papers

[1] **Chun-Hsiang Chan**, Ri-Gui Wu, Yi-Yuan Shao (Under Review). Physicochemical properties, *in vitro* digestibility, and estimated glycemic index of Ningbo rice cakes with partial resistant starch substitutions. *Food Chemistry*. (**SCI IF: 7.514**; Q1 7/144 in Food Science & Technology)

[2] **Chun-Hsiang Chan**, Wen-Chi Huang, Yi-Chien Lu, Hsing-Fen Hsiao, and Wing P. Chan (2021). BatchBMD as an Efficient and Accurate Dual-Energy X-ray Absorptiometry Report Generator. *Diagnostics*. Vol.11(12), 2403. https://doi.org/10.3390/diagnostics11122403 (**SCI IF: 3.706**; Q2 45/167 in Medicine, General, and Internal)

[3] **Chun-Hsiang Chan**, Tzai-Hung Wen (2021). Revisiting the Effects of High-speed Railway Transfers in the Early COVID-19 Cross-province Transmission in China. *International Journal of Environmental Research and Public Health*. Vol.18(12), 6394. https://doi.org/10.3390/ijerph18126394 (**SSCI IF: 3.390**; Q1 32/171 in Public, Environmental & Occupational Health)

[4] **Chun-Hsiang Chan**, Ri-Gui Wu, Yi-Yuan Shao (2021). The Effects of Ultrasonic Treatment on Physicochemical Properties and *in vitro* Digestibility of Semigelatinized High Amylose Maize Starch. *Food Hydrocolloids*. Vol.119, 106831. https://doi.org/10.1016/j.foodhyd.2021.106831 (**SCI IF: 9.147**; Q1 5/74 in Applied Chemistry; Q1 5/144 in Food Science & Technology)

[5] Wei-Hsian Chi, Fei-Ying Kuo, Chang-Hui Chi, Shi-Chiang Lin, **Chun-Hsiang Chan** (2021). Spatial-temporal Analysis of Pilgrimage Network of Mazu-temples in Yunlin and Chiayi County: A Study on Geographical Distribution of Pilgrimage Group. *Journal of Geographical Science*. Vol.98, 45-82. https://doi.org/10.6161/jgs.202104_(98).0003 (**TSSCI**)

[6] **Chun-Hsiang Chan**, Tzu-How Chu, Jiun-Huei Proty Wu, Tzai-Hung Wen (2021). Spatially Characterizing Major Airline Alliances: A Network Analysis.*ISPRS International Journal of Geo-Information (IJGI)*. Vol.10(1), 38. https://doi.org/10.3390/ijgi10010038 (**SCI IF: 2.899**; Q2 23/50 in Geography; Q2 76/162 in Computer Science)

[7] Yuan-Fang Tsai, **Chun-Hsiang Chan**, Keng-Han Lin, Wen-Ray Su, Jinn-Chyi Chen (2017, Jul). New debris flow critical rainfall line setting via cluster analysis and support vector machine after the Chi-Chi huge earthquake. *2017 13th International Conference on Natural Computation, Fuzzy Systems and Knowledge Discovery (ICNC-FSKD)* (**EI**). 970-975.

Peer-Reviewed Conference Papers

[1] **Chun-Hsiang Chan**, Tzai-Hung Wen (2021, Oct). Timely exposure risk at airports app for air travelers ─using the COVID-19 pandemic as an example. *2021 Asian Seminar in Regional Science ─Regional Science in Post-Pandemic Era*, Taichung, Taiwan.

[2] **Chun-Hsiang Chan**, Shih-Chia Wu (Jul, 2021) Reversible or Irreversible User Engagement Behavior Changes During COVID-19 Pandemic: a Case Study of a Top Restaurant Brand in Taiwan. *28th Annual BledCom Conference*, Bled, Slovenia.

[3] **Chun-Hsiang Chan**, Ri-Gui Wu, Yi-Yuan Shao (Sep, 2020) Ultrasonic Treatment on Starch Granule Morphology and Physicochemical Properties of High Amylose Maize Starch. *2020 Canada - Taiwan Bilateral Conference on Nutrition, Health, Benefit and Innovative Processing of Whole Grains and Pulses*, Taichung, Taiwan.

[4] 吳優、詹竣翔、邵貽沅 (2020 年 6 月) 探討超音波處理對半糊化之糯性玉米澱粉物性和消化性的影響。台灣農業化學會第 *58* 次會員大會。臺北，臺灣。

[5] 吳優、詹竣翔、邵貽沅 (2020 年 6 月) 探討去支鏈、超音波和回凝處理對澱粉物性和消化性的影響。台灣農業化學會第 *58* 次會員大會。臺北，臺灣。

[6] **Chun-Hsiang Chan**, Tzai-Hung Wen, Tzu-How Chu, Jiun-Huei Proty (Jan, 2020) Characterizing the Roles of Nodes in the Global Airline Alliance Network: Considering Structure Equivalence and Geographic Proximity. *NetSci-X 2020*, Tokyo, Japan.

[7] **Chun-Hsiang Chan**, Ri-Gui Wu, Yi-Yuan Shao (Sep, 2019) Effect of Pregelatinized Temperature on the Morphology and Resistent Starch of High Amylose Corn Starch *2019 International Conference on Grain Industry Development and Annual Meeting of Taiwan Grain Industry Association (TGIA)*, Taichung, Taiwan.

[8] Ri-Gui Wu, **Chun-Hsiang Chan**, Yi-Yuan Shao (Sep, 2019) Quality of Ningbo Rice Cake with Debranched Starch. *2019 International Conference on Grain Industry Development and Annual Meeting of Taiwan Grain Industry Association (TGIA)*, Taichung, Taiwan.

[9] **Chun-Hsiang Chan**, Tzu-How Chu, Jehn-Yih Juang, Ching-Hao Mao, Shin-Ying Huang (Apr, 2019) Causal Relationship on Sulfur Dioxide Between Stationary Emission Source and Ambient Air Quality: a Data-driven Approach. *EGU General Assembly 2019*, Vienna, Austria.

[10] **Chun-Hsiang Chan**, Tzu-How Chu, Jiun-Huei Proty Wu (Apr, 2017) Statistical Analysis of Very Low Frequency Electromagnetic Signal for Earthquake Precursor Anomalies. *EGU General Assembly 2017*, Vienna, Austria.

[11] Yuan-Fan Tsai, **Chun-Hsiang Chan**, Yuan-Ning Chan (Jul, 2016) To Establish an Integrative Information System for Debris-Flow Disaster. *Asian Conference on Civil, Material and Environmental Sciences*, Hokkaido, Japan.

[12] Yuan-Fan Tsai, **Chun-Hsiang Chan**, Yi-Ting Huang, Jie-Ming Guan, Cheng-Hsin Chang (Jun, 2016) Establishing Optimal YouBike Route Planning for Cuisine in Smart Phone Application. *Hong Kong International Conference on Social Science 2016*, Hong Kong.

[13] 蔡元芳、詹媛甯、周煥傑、黃竹頤、林庚翰、詹竣翔 (2015 年 10 月)。跨平台整合之防災即時資訊網建置。第十九屆海峽兩岸水利科技交流研討會。上海，中國。

[14] **Chun-Hsiang Chan**, Tzu-How Chu, Jiun-Huei Proty Wu (Jun, 2015) Earthquake Precursor Detection for Epicenter Spatial Analysis and Estimation. *International Conference on Earth Observations and Societal Impacts 2015 (ICEO&SI 2015)*, Kaohsiung, Taiwan.

[15] Wen-Xiang Wang, Lan-Xiang Wang, Ting Jin, Li-Ting An, Hui-Ying Wang, Tzu-How Chu, **Chun-Hsiang Chan**, Rei-Yuan Wang (Jun, 2015) The Earthquake Precursor Detecting Method Applied in the 2011 Tohoku Earthquake. *International Workshop on Earthquake Preparation Process 2015 - Observation, Validation, Modeling, Forecasting - (IWEP2)*, Chiba, Japan.

[16] Yuan-Fan Tsai, **Chun-Hsiang Chan** (Jun, 2015) To Establish an Interactional Real-Time Debris-Flow Disaster Information System and Extension. *6th International Conference on Debris-Flow Hazards Mitigation: Mechanics, Prediction and Assessment (DFHM6)*, Tsukuba, Japan.

[17] 管潔明、黃翊婷、蔡元芳、詹竣翔 (2015 年 5 月) 微笑單車安全路線規劃應用於智慧型手持裝置美食 APP。第 *19* 屆臺灣地理國際學術研討會。臺北，臺灣。

[18] 林庚翰、謝青恩、吳昊宸、蔡元芳、詹竣翔 (2015 年 5 月) MFAs 慢跑社群手持裝置 APP 之開發。第 *19* 屆臺灣地理國際學術研討會。臺北，臺灣。

[19] 王瑞麟、蔡元芳、詹竣翔 (2015 年 5 月) 自行車停車空間規劃模式之建置–以台北市大安區為例。第 *19* 屆臺灣地理國際學術研討會。臺北，臺灣。

[20] Yuan-Fan Tsai, **Chun-Hsiang Chan**, Chu-Yi Huang, Huan-Chieh Chou (Apr, 2015) Crowdsourcing Oriented Ontology Applies in Instant Debris-flow Disaster Information Platform in Web and Smart Phone Application. *EGU General Assembly 2015*, Vienna, Austria.

[21] **Chun-Hsiang Chan**, Tzu-How Chu, Jiun-Huei Proty Wu, Ruei-Yuan Wang, Yi-Shiang Shiu (Jul, 2014) Establishing VLF Electromagnetic Monitoring System for Earthquake Precursors Analysis and Application. *The 15th Crossstrait Symposium on Environment, Resource and Ecological Conservation*, Zhangjiajie, China.

[22] Tzu-How Chu, Ruei-Yuan Wang, **Chun-Hsiang Chan**, Yi-Shiang Shiu (May, 2014) The Study on the Prediction of Earthquake Precursors in Taiwan by Using the Monitoring Systems of Low-Frequency Electromagnetic Wave. *The 9th Taipei International Digital Earth Symposium*, Taipei, Taiwan.

[23] **Chun-Hsiang Chan**, Tzu-How Chu, Jiun-Huei Proty Wu (Apr, 2014) VLF Electromagnetic Signal Analysis in Seismic Epicenter Application. *2014 Association of American Geographers' Annual Meeting*, Tampa, Florida, United States.

[24] Yuan-Fan Tsai, **Chun-Hsiang Chan**, Yu-Qian Zhang, Wan-Jou Lu, Chi-Chen Yeh (Mar, 2014) Taipei City Marketing Application in Smart Phone Application Operation and Design. *The 2nd International Symposium on Education, Psychology, Society and Tourism (ISEPST 2014)*, Tokyo, Japan.

[25] **Chun-Hsiang Chan**, Yuan-Fan Tsai (Jul, 2013) Allocating reforestation areas for variation of soil erosion maximization: MCLP formulation and pre-emptive goal programming. *The 14th Cross-strait Symposium on Environment, Resource and Ecological Conservation*, Kunming, Yunnan, China.

[26] Yuan-Fan Tsai, Yu-Lun Cheng, **Chun-Hsiang Chan** (Jun, 2012) Setting up the Critical Rainfall Line For Debris-flow Via Support Vector Machines. *The International Conference on Earth Observations and Societal Impacts 2012 (ICEO-SI 2012)*, Taipei, Taiwan.

[27] **Chun-Hsiang Chan**, Yuan-Fan Tsai (Jul, 2011) Establishing Debris-flow Cluster and Modified Critical Line. *The 12th Cross-strait Symposium on Environment, Resource and Ecological Conservation*, Nanchang, Jiangxi, China.

Books, Reports, and News

[1] **[Book]** 金威澄、李正哲、李冠儒、詹竣翔、江承頤、曾毓媛、王立宏、吳連哲、廖德融、劉柏賢、沈祥茵 (2021 年 11 月 17 日) 當代英雄從台灣出發–台大學生的俄羅斯與後蘇聯行旅 (Герои нашего времени - С Тайваня в Россию и постсоветское пространств)。中文：第 42-45 頁 & 第 138-143 頁。俄文：第 25-28 頁 & 第 87-91 頁。臺北市：櫻桃園文化出版有限公司。

[2] **[Article]** 詹竣翔 (2021 年 7 月 2 日) 臺大地理系 2021 年楊楠子人文學術講座：人口動態的前沿研究暨地理職涯發展的交流。國立臺灣大學理學院院刊第 48 期：國際交流。臺北市：國立臺灣大學理學院。https://bit.ly/3wsGSOh

[3] **[Report]** 詹竣翔、邵貽沅 (2021 年 4 月 15 日) 參加 2021 年 ICBC 國際研討會- 線上會議報告。第 7-11 頁臺北市：中華穀類食品工業技術研究所。

[4] **[News]** 溫在弘、詹竣翔 (2020 年 4 月 27 日) 10 大關鍵圖表掌握新冠肺炎產經衝擊。天下雜誌。https://bit.ly/2PckaqF

[5] **[News]** 溫在弘、詹竣翔、郭飛鷹 (2020 年 4 月 6 日) 防堵疫情擴散台大研究團隊：生活圈防疫勝過封城。東森新聞。https://bit.ly/35bTrWA

[6] **[News]** 溫在弘、詹竣翔 (2020 年 3 月 5 日) 【口罩下的人 #02】封城能擋疫情？台大教授算高鐵班次發現：周邊城市確診人數是其他城市的 1.5 倍。未來城市 | 天下雜誌。https://bit.ly/33ym7bK

[7] **[News]** 朱子豪、詹竣翔 (2015 年 1 月 20 日) 測「超低頻電磁波」可預測地震? 民視新聞。https://bit.ly/3HHjzXg